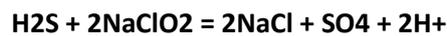


Oxygene® HOW IT WORKS

The ultimate eliminator of bad breath is a brilliant, non-toxic ingredient found in Oxyfresh's revolutionary dental products – and nowhere else! Oxygene® is Oxyfresh's registered name for the active, exclusive ingredient that safely and effectively neutralizes bad breath molecules at the source. Oxyfresh maintains complete control over the manufacturing process of its Oxygene® (stabilized chlorine dioxide) to ensure the buffered solution maintains a neutral pH and meets the highest quality standards every time.

The mechanism of action of Oxygene® is through an oxidation-reduction reaction. It acts by oxidizing volatile sulphur compounds, the molecules responsible for bad breath. The chemical reaction is:



Oxygene® rapidly and completely oxidizes the sulphur-containing molecule. The end products are sodium chloride, a water-soluble sulphate anion (innocuous) and two hydrogen atoms. The 2H+ reacts with the sodium citrate buffer to form citric acid. The end products are all completely safe.

There is no formation of free chlorine, free chlorine dioxide, chlorinated organics or free hydroxyl radicals. Stabilized chlorine dioxide is an ingredient that has been used in water purification for over 50 years to eliminate microorganisms. It has been EPA tested and recommended over chlorine for water purification. Chlorine reacts with the organic debris present in water, forming chlorinated organics or trihalomethanes, which are known to be carcinogenic. The use of stabilized chlorine dioxide in water purification safely eliminates microorganisms and odours. Oxygene® in Oxyfresh dental products is in an inactive state to provide product stability. Oxygene® is activated as the pH in the environment is lowered. When Oxygene® is introduced into the oral cavity, the acidity of the saliva activates the solution. The lower the pH of the saliva, the more activated the solution becomes. The greater the presence of bacteria, the more acidic the environment. Additionally, the longer the solution is in contact with the oral tissues, the greater the activation and effectiveness. When activated, Oxygene® oxidizes the sulphur bonds, rendering them inactive.

Volatile Sulphur Compounds (VSCs) Volatile sulphur compounds are recognized as the source and cause of halitosis. VSCs are produced primarily by the action of gram negative, anaerobic oral bacteria on sulphur-containing amino acids derived from peptides and protein in gingival crevicular fluid, blood, desquamated epithelial cells, saliva and food. Methyl mercaptans and hydrogen sulphides are the primary VSCs produced from these bacterial by-products.

Research has also recognized VSCs as the first step in the destruction of the periodontium by microorganisms. These VSCs are shown to increase the permeability of the epithelial lining, increasing the uptake of bacterial toxins and bacteria themselves into the epithelial barrier.

This action initiates the breakdown of collagen in tissues. The destructive effects of the volatile sulphur compounds have been shown to occur between six to ten hours. Research has revealed oxidizing agents as the most powerful way to reduce and eliminate the harmful effects these VSCs have in the mouth.

Oxidizing Versus Oxygenating Hydrogen peroxide is an oxygenating agent that releases nascent oxygen, which has been shown to be of great value in the acidation of pathogenic and anaerobic organisms, viruses, bacteria and fungi. The undesirable aspect of hydrogen peroxide is that it enters

biochemical reactions that generate an even more toxic substance, hydroxyl radical, the most deleterious of toxic oxygen metabolites (Haber Weiss Reactions). Stabilized chlorine dioxide, unlike hydrogen peroxide, is an oxidizing agent and is completely safe and non-toxic at over 10

times the normal efficacious levels. The major degradation compound is non-toxic as well. Most importantly, it does not initiate free radical generation.

Alcohol Free

Most commercial mouthwashes contain an alarmingly high percentage of alcohol (up to 27 percent in some cases). There are many reasons why patients should not be using alcohol-based dental products. Alcohol does not directly neutralize volatile sulphur compounds. It only masks bad breath, providing a false, temporary fix. Additionally, alcohol dries out the mouth, which encourages more odour-causing bacteria to accumulate, making a bad breath problem even worse.

Zinc Acetate

A unique and patented formula of Oxygene® and zinc acetate has been included in several Oxyfresh dental hygiene products, providing an even more powerful deodorizing effect. Zinc is proven pharmacologically safe and effective in oral health products. The combination of Oxygene® and zinc helps to remove more of the different kinds of molecules that cause bad breath, making it extremely effective in fighting even the worst halitosis. Author Morton Pader noted in Oral Hygiene Products and Practice, "There is ... a substantial body of evidence indicating that appropriate zinc compounds, properly formulated into oral hygiene products, can be valuable adjuncts in the maintenance of a sound periodontal condition."

Essential oils

Essential oils are an added benefit of Oxyfresh's exclusive dental line of products. They provide safe and natural flavouring as opposed to the harsh chemicals, artificial flavour's and heavy acidic sweeteners found in most commercial brands. These natural oils leave the mouth feeling completely fresh and clean — without an aftertaste! Additionally, they provide the benefit of soothing inflammation and irritation and provide added comfort in the healing process

